

#2

OICE

## RAW SEQUENCE LISTING

PATENT APPLICATION: US/09/961,086

DATE: 10/09/2001

TIME: 11:44:58

Input Set : A:\104607DV.txt

Output Set: N:\CRF3\10092001\I961086.raw

3 <110> APPLICANT: UNIVERSITY OF MARYLAND, BALTIMORE  
 4 ROSS, Douglas D.  
 5 DOYLE, L. Austin  
 6 ABRUZZO, Lynne  
 8 <120> TITLE OF INVENTION: BREAST CANCER RESISTANCE PROTEIN (BCRP) AND THE DNA  
 9 WHICH ENCODES IT  
 11 <130> FILE REFERENCE: EP19376-019  
 C--> 13 <140> CURRENT APPLICATION NUMBER: US/09/961,086  
 C--> 14 <141> CURRENT FILING DATE: 2001-09-21  
 16 <150> PRIOR APPLICATION NUMBER: US 60/073,763  
 17 <151> PRIOR FILING DATE: 1998-02-05  
 19 <150> PRIOR APPLICATION NUMBER: PCT/US99/02577  
 20 <151> PRIOR FILING DATE: 1999-02-05  
 22 <160> NUMBER OF SEQ ID NOS: 7  
 24 <170> SOFTWARE: PatentIn Ver. 2.1  
 26 <210> SEQ ID NO: 1  
 27 <211> LENGTH: 655  
 28 <212> TYPE: PRT  
 29 <213> ORGANISM: Homo sapiens  
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 36 20 25 30  
 38 Glu Gly Ala Val Leu Ser Phe His Asn Ile Cys Tyr Arg Val Lys Leu  
 39 35 40 45  
 41 Lys Ser Gly Phe Leu Pro Cys Arg Lys Pro Val Glu Lys Glu Ile Leu  
 42 50 55 60  
 44 Ser Asn Ile Asn Gly Ile Met Lys Pro Gly Leu Asn Ala Ile Leu Gly  
 45 65 70 75 80  
 47 Pro Thr Gly Gly Gly Lys Ser Ser Leu Leu Asp Val Leu Ala Ala Arg  
 48 85 90 95  
 50 Lys Asp Pro Ser Gly Leu Ser Gly Asp Val Leu Ile Asn Gly Ala Pro  
 51 100 105 110  
 53 Arg Pro Ala Asn Phe Lys Cys Asn Ser Gly Tyr Val Val Gln Asp Asp  
 54 115 120 125  
 56 Val Val Met Gly Thr Leu Thr Val Arg Glu Asn Leu Gln Phe Ser Ala  
 57 130 135 140  
 59 Ala Leu Arg Leu Ala Thr Thr Met Thr Asn His Glu Lys Asn Glu Arg  
 60 145 150 155 160  
 62 Ile Asn Arg Val Ile Gln Glu Leu Gly Leu Asp Lys Val Ala Asp Ser  
 63 165 170 175  
 65 Lys Val Gly Thr Gln Phe Ile Arg Gly Val Ser Gly Gly Glu Arg Lys  
 66 180 185 190  
 68 Arg Thr Ser Ile Gly Met Glu Leu Ile Thr Asp Pro Ser Ile Leu Phe  
 69 195 200 205  
 71 Leu Asp Glu Pro Thr Thr Gly Leu Asp Ser Ser Thr Ala Asn Ala Val

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74 Leu Leu Leu Leu Lys Arg Met Ser Lys Gln Gly Arg Thr Ile Ile Phe
75 225      230      235      240
77 Ser Ile His Gln Pro Arg Tyr Ser Ile Phe Lys Leu Phe Asp Ser Leu
78      245      250      255
80 Thr Leu Leu Ala Ser Gly Arg Leu Met Phe His Gly Pro Ala Gln Glu
81      260      265      270
83 Ala Leu Gly Tyr Phe Glu Ser Ala Gly Tyr His Cys Glu Ala Tyr Asn
84      275      280      285
86 Asn Pro Ala Asp Phe Phe Leu Asp Ile Ile Asn Gly Asp Ser Thr Ala
87      290      295      300
89 Val Ala Leu Asn Arg Glu Glu Asp Phe Lys Ala Thr Glu Ile Ile Glu
90 305      310      315      320
92 Pro Ser Lys Gln Asp Lys Pro Leu Ile Glu Lys Leu Ala Glu Ile Tyr
93      325      330      335
95 Val Asn Ser Ser Phe Tyr Lys Glu Thr Lys Ala Glu Leu His Gln Leu
96      340      345      350
98 Ser Gly Gly Glu Lys Lys Lys Lys Ile Thr Val Phe Lys Glu Ile Ser
99      355      360      365
101 Tyr Thr Thr Ser Phe Cys His Gln Leu Arg Trp Val Ser Lys Arg Ser
102      370      375      380
104 Phe Lys Asn Leu Leu Gly Asn Pro Gln Ala Ser Ile Ala Gln Ile Ile
105 385      390      395      400
107 Val Thr Val Val Leu Gly Leu Val Ile Gly Ala Ile Tyr Phe Gly Leu
108      405      410      415
110 Lys Asn Asp Ser Thr Gly Ile Gln Asn Arg Ala Gly Val Leu Phe Phe
111      420      425      430
113 Leu Thr Thr Asn Gln Cys Phe Ser Ser Val Ser Ala Val Glu Leu Phe
114      435      440      445
116 Val Val Glu Lys Lys Leu Phe Ile His Glu Tyr Ile Ser Gly Tyr Tyr
117      450      455      460
119 Arg Val Ser Ser Tyr Phe Leu Gly Lys Leu Leu Ser Asp Leu Leu Pro
120 465      470      475      480
122 Met Thr Met Leu Pro Ser Ile Ile Phe Thr Cys Ile Val Tyr Phe Met
123      485      490      495
125 Leu Gly Leu Lys Pro Lys Ala Asp Ala Phe Phe Val Met Met Phe Thr
126      500      505      510
128 Leu Met Met Val Ala Tyr Ser Ala Ser Ser Met Ala Leu Ala Ile Ala
129      515      520      525
131 Ala Gly Gln Ser Val Val Ser Val Ala Thr Leu Leu Met Thr Ile Cys
132      530      535      540
134 Phe Val Phe Met Met Ile Phe Ser Gly Leu Leu Val Asn Leu Thr Thr
135 545      550      555      560
137 Ile Ala Ser Trp Leu Ser Trp Leu Gln Tyr Phe Ser Ile Pro Arg Tyr
138      565      570      575
140 Gly Phe Thr Ala Leu Gln His Asn Glu Phe Leu Gly Gln Asn Phe Cys
141      580      585      590
143 Pro Gly Leu Asn Ala Thr Gly Asn Asn Pro Cys Asn Tyr Ala Thr Cys
144      595      600      605

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146 Thr Gly Glu Glu Tyr Leu Val Lys Gln Gly Ile Asp Leu Ser Pro Trp
147      610                      615                      620
149 Gly Leu Trp Lys Asn His Val Ala Leu Ala Cys Met Ile Val Ile Phe
150 625                      630                      635                      640
152 Leu Thr Ile Ala Tyr Leu Lys Leu Leu Phe Leu Lys Lys Tyr Ser
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157 <211> LENGTH: 2418
158 <212> TYPE: DNA
159 <213> ORGANISM: Homo sapiens
161 <400> SEQUENCE: 2
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163 ggtggtcttg ttaagtggaa actgctgctt tagagtttgt ttggaagggtc cgggtgactc 120
164 atcccaacat ttacatcctt aattgttaaa gcgctgcctc cgagcgcacg catcctgaga 180
165 tcctgagcct ttggttaaga ccgagctcta ttaagctgaa aagataaaaa ctctccagat 240
166 gtcttccagt aatgtcgaag tttttatccc agtgtcaciaa ggaaacacca atggcttccc 300
167 cgcgacagct tccaatgacc tgaaggcatt tactgaagga gctgtgttaa gttttcataa 360
168 catctgctat cgagtaaaac tgaagagtgg ctttctacct tgtcgaaaac cagttgagaa 420
169 agaaatatta tcgaatatca atgggatcat gaaacctggg ctcaacgcca tcctgggacc 480
170 cacagggtga ggcaaactct cgttattaga tgtcttagct gcaaggaaaag atccaagtgg 540
171 attatctgga gatgttctga taaatggagc accgcgacct gccaatitca aatgtaattc 600
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173 gttctcagca gctcttcggc ttgcaacaac tatgacgaat catgaaaaaa acgaacggat 720
174 taacagggtc attcaagagt taggtctgga taaagtggca gactccaagg ttggaactca 780
175 gtttatccgt ggtgtgtctg gaggagaaaag aaaaaggact agtataggaa tggagcttat 840
176 cactgatcct tccatcttgt tcttgatga gcctacaact ggcttagact caagcacagc 900
177 aaatgctgtc cttttgctcc tgaaaaggat gtctaagcag ggacgaacaa tcatcttctc 960
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179 aggaagactt atgttccacg ggcctgctca ggaggccttg ggatactttg aatcagctgg 1080
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197 ctaccctggg ggcttggtga agaatacagt ggccttggct tgtatgattg ttattttcct 2160
198 cacaattgcc tacctgaaat tgttatttct taaaaaatat tcttaaattt ccccttaatt 2220
199 cagtatgatt tatcctcaca taaaaaagaa gcactttgat tgaagtattc aatcaagttt 2280

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200 ttttgttgtt ttctgttccc ttgccatcac actgttgac agcagcaatt gttttaaaga 2340
201 gatacatatt tagaaatcac aacaaactga attaaacatg aaagaaccca aaaaaaaaga 2400
202 tatcactcag cataatga 2418
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206 <211> LENGTH: 16
207 <212> TYPE: DNA
208 <213> ORGANISM: Homo sapiens
210 <400> SEQUENCE: 3
211 cgaccgacga cacaga 16
214 <210> SEQ ID NO: 4
215 <211> LENGTH: 21
216 <212> TYPE: DNA
217 <213> ORGANISM: Homo sapiens
219 <400> SEQUENCE: 4
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224 <211> LENGTH: 19
225 <212> TYPE: DNA
226 <213> ORGANISM: Homo sapiens
228 <400> SEQUENCE: 5
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233 <211> LENGTH: 21
234 <212> TYPE: DNA
235 <213> ORGANISM: Homo sapiens
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249 aggcagatgc cttcttcgtt atgatgttta cccttatgat ggtggcttat tcagccagtt 180
250 ccatggcact ggccatagca gcaggtcaga gtgtggtttc tgtagcaaca cttctcatga 240
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252 catcttggtt gtcattggctt cagtacttca gcattccacg atatggattt acggctttgc 360
253 agcataatga atttttggga caaaacttct gccaggact caatgcaaca ggaaacaatc 420
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258 ttgttgtttt ctgttccctt gccatcacac tgttgcacag cagcaattgt tttaaagaga 720
259 tacattttta gaaatcacia caaactgaat taaacatgaa agaaccctaaa aaaaaagata 780
260 tcactcagca taatg 795

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## VERIFICATION SUMMARY

DATE: 10/09/2001

PATENT APPLICATION: US/09/961,086

TIME: 11:44:59

Input Set : A:\104607DV.txt

Output Set: N:\CRF3\10092001\I961086.raw

L:13 M:270 C: Current Application Number differs, Replaced Current Application Number  
L:14 M:271 C: Current Filing Date differs, Replaced Current Filing Date